

2014-2015 Kentucky Department of Fish and Wildlife Resources Elk Report



Cover photo: Will Bowling, KDFWR

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Introduction

The Elk Program is administered under the Wildlife Division of Kentucky Department of Fish and Wildlife Resources (KDFWR). The KDFWR is an agency of the Kentucky Tourism, Arts & Heritage Cabinet. It is overseen by a nine-member commission who are nominated by Kentucky’s sportsmen and sportswomen. The nominees chosen by the sportsmen and sportswomen are sent to the Governor, who appoints the Commission members for each district. The department employs about 450 full-time staff, which includes conservation officers, wildlife and fisheries biologists, conservation educators, information and technology staff, public relations and administrative professionals.

KDFWR receives no money from the state’s General Fund. Agency funding is provided through the sale of hunting and fishing licenses, boating registration fees, and federal grants based on the number of licenses sold in the state.

The Elk Program is tasked with managing the elk herd in the state to provide ample hunting opportunity while balancing the needs of consumptive and non-consumptive user groups. The Elk Program is made up of one program coordinator, Gabe Jenkins, and three biologists: Dan Crank, Will Bowling, and John Hast. Program staff are based out of headquarters in Frankfort as well as the elk zone in eastern Kentucky.

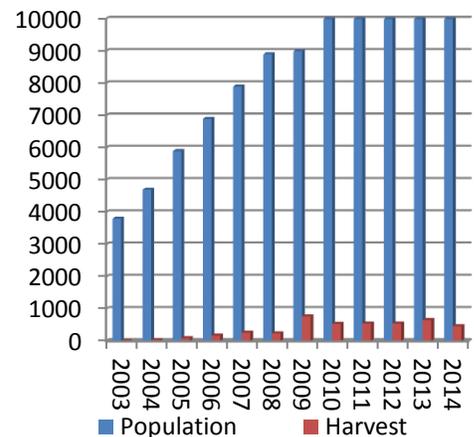
Elk In Kentucky

Elk are native to KY and were present until the mid 1880’s, when the population was eliminated due to habitat degradation and overhunting. This is why the Kentucky elk program is considered a restoration, not an introduction. Kentucky’s present elk herd is a free-ranging, wild herd established from 1,550 wild elk captured out-of-state and released into southeast KY between December 1997 and March 2002. Contributing states included Utah, Kansas, Oregon, North Dakota, Arizona, New Mexico, with the majority of elk captured in Utah. Release sites were located in Harlan, Knott, Leslie, Letcher, Martin, Perry, and Pike counties. The elk restoration zone covers 16 counties in the southeast region of the state (approximately 4.1 million acres).

The current estimated population is approximately 10,000 animals. Kentucky has the highest elk population of any state east of the Mississippi River.

The first elk hunt was conducted in 2001. Six bulls and six cows were harvested, with all hunters filling their permit. The same number of permits was issued in 2002 and 2003. In 2004, the number of permits was increased to 40. Beginning that year, legal deer hunters were also allowed to harvest elk outside designated elk zones in order to control populations, keeping elk numbers low in agricultural areas or poor elk habitat. The number of elk permits has increased nearly every year since 2004, with a total of 1,010 permits available in 2014.

Elk Population Estimate



Elk Hunting Permits

General Quota Hunt Permits

The majority of KY elk permits are issued by way of a computer-randomized drawing.

Applicants must apply online between Jan 1 and April 30 each year. They may apply

for two permits from the four permit types (bull

archery/crossbow, bull firearm, antlerless

archery/crossbow, and antlerless firearm), but no

more than once for each type. Both resident and non-

resident hunters may apply for the elk permit drawing. A

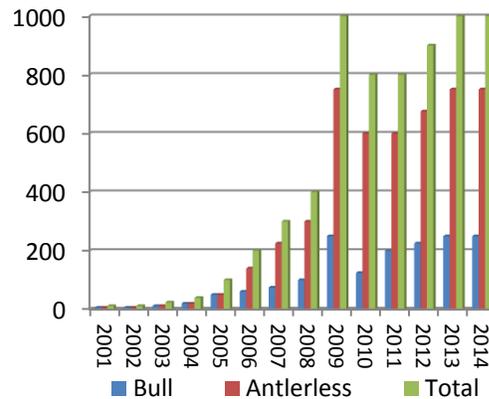
maximum of 10% of the available permits may go to

non-resident applicants. During the month of May, applicants' names are drawn at

random by a separate Kentucky government agency (the Commonwealth Office of Technology [COT]) and then randomly assigned a permit type based on their application

choices.

Elk Tags Available by Year



Commission Permits

There are 10 Commission permits that can be used for either bulls or cows. These permits are assigned each year by the KDFWR Commission members to conservation groups.

Those groups then auction or raffle the permits in order to raise money for conservation projects.

Landowner Permits

KDFWR has a program that allows large land holders in the elk zone to enter their land into management agreements, in order to provide hunters additional public access to

hunnable land. Landowners are issued an either-sex elk permit for every 5,000 acres enrolled in the public access program. Those permits may only be used on the land the

landowner enrolled in the agreement. However, the landowner may transfer or sell the permit to whoever they choose, and many landowner permits are auctioned by

conservation groups.

Youth Permits

Hunters that are 15 years of age or younger may apply for the youth-only drawing. There are currently 10 youth-only either-sex permits. Youth that are not chosen during the

youth-only drawing are entered back into the general drawing pool in order to give them a chance at the remaining general quota hunt permits. Youth may also apply for the

general drawing twice, giving them 3 chances.

Late Season Hunt Permits

The late season hunt is designed to remove elk in areas that have had elk damage concerns over a number of years. The dates of the hunt correspond with the time of year when most damage occurs. This allows hunters to target elk that are likely causing damage, and to alleviate that burden to local landowners. Hunters are limited to the Knott County and Stony Fork EMU (Elk Management Unit). Only applicants that live inside the 6 counties within the two Elk Management Units are eligible to be drawn in the late season hunt. In 2014, 5 hunters were drawn for the late season hunt.

Out of Zone Elk Permits

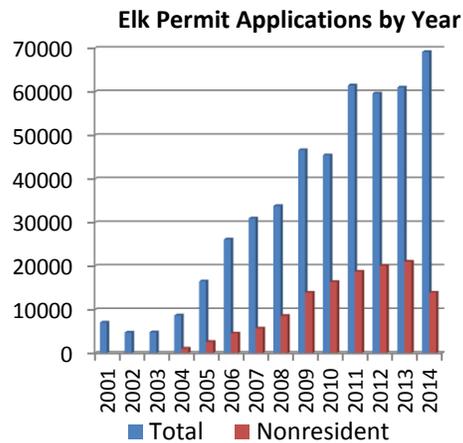
Elk may be taken from any county outside the 16-county Elk Restoration Zone by hunters who possess an annual Kentucky hunting license and an out-of-zone elk permit. These hunters must follow deer season and equipment regulations, but are not required to possess a deer permit.

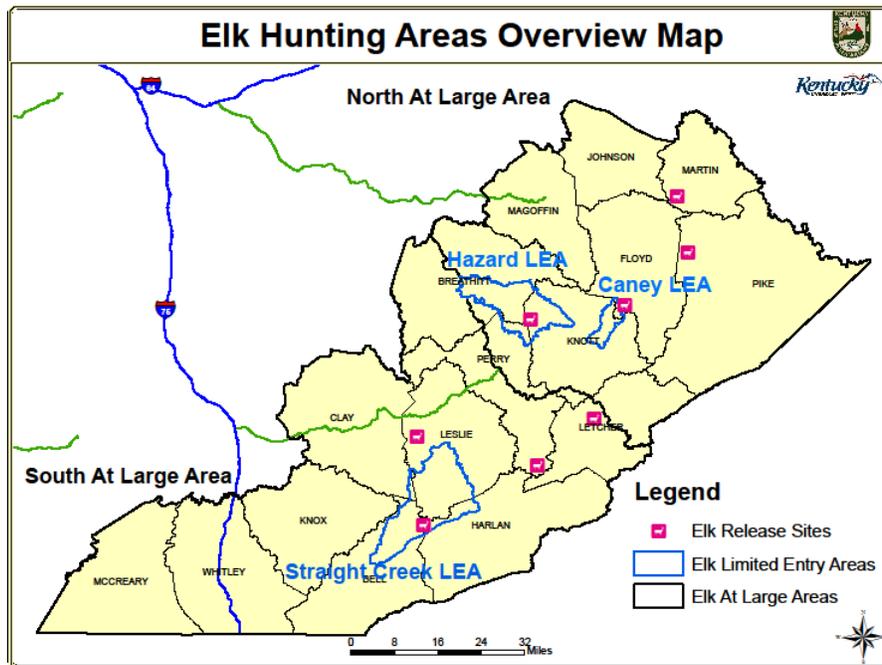
Quota Drawing Process and Statistics

How Permits Are Drawn

Elk applications go on sale January 1 of each year and can only be purchased online at fw.ky.gov. Hunters can apply for two different permit types. The application period ended at midnight on April 30, 2014. After the application period, a computer drawing conducted by the COT randomly selects the hunters from the pool of applicants. Drawn hunters must then rate (from 1-5)

which areas they would like to hunt. These areas included, for the 2014-2015 season, Hazard Limited Entry Area (LEA), Straight Creek LEA, Caney LEA, North At Large, and South At Large. A second computer drawing is held and hunters are assigned a hunting area based on their stated preference and the randomized order in which they were drawn. If a small group (up to 5) of drawn applicants would like to hunt the same area, they were able to rank, and be drawn for, their preferred hunt areas as a group.





Odds

The odds of drawing a permit for the 2014-2015 seasons are shown in the table below. These numbers are based on how many applicants were in each permit type and how many permits were issued.

Type	In State Odds	Out of State Odds
Bull Firearm	1/149	1/729
Cow Firearm	1/29	1/96
Bull Archery	1/86	1/673
Cow Archery	1/14	1/73
Either-sex – Youth	1/135	1/369

License and Permit Fees

Residents

- Elk Lottery Application: \$10/application
- Elk Permit: \$100 Bull, \$60 Antlerless
- General Resident Hunting License: \$20

Non-residents

- Elk Lottery Application: \$10/application
- Elk Permit: \$550 Bull, \$400 Antlerless
- General Non-resident Hunting License: \$140

General Information about the 2014-2015 Season

Season Dates

Archery Season Dates

Bull Only: September 20–October 3, 2014

Either-sex archery and crossbow: Oct 18–19, Nov 8–Dec 12, Dec 27–31.

Either-sex archery only: Oct 18–Dec 12, Dec 27–Jan 19, 2015.

Firearms Bull week 1: October 4–10

Firearms Bull week 2: October 11–17

Firearms Cow week 1: December 13–19

Firearms Cow week 2: December 20–26

Bag Limits

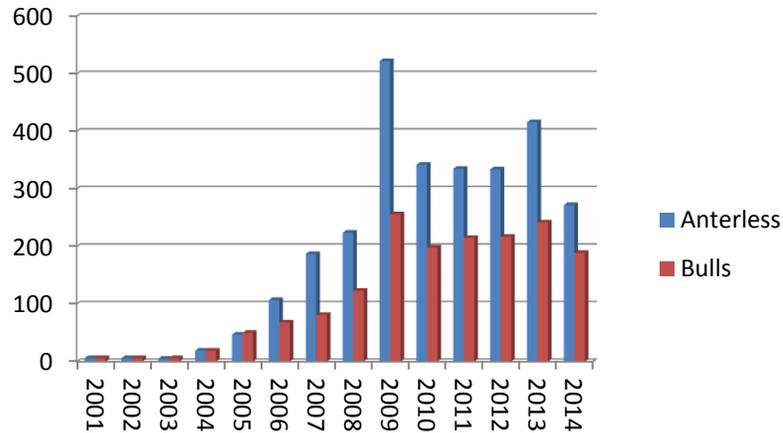
Elk hunters may only take one elk per year.

Area Permit Allotment

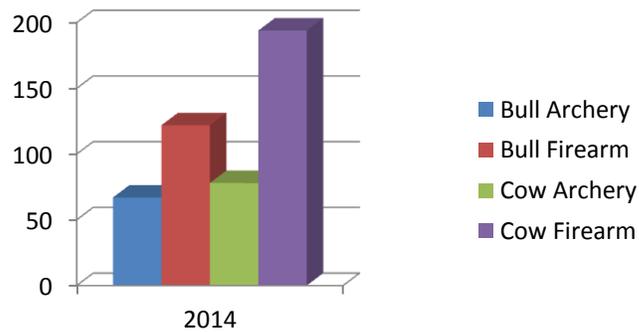
	Caney LEA	Hazard LEA	Straight Creek LEA	North At Large	South At Large	Total
Bull Archery	4	16	17	32	31	100
Cow Archery	10	68	62	75	75	290
Bull Firearm Week 1	3	16	17	21	18	75
Bull Firearm Week 2	3	16	17	21	18	75
Cow Firearm Week 1	10	64	42	58	56	230
Cow Firearm Week 2	10	64	42	58	56	230
Total	40	244	197	265	254	1000

2014-2015 Harvest Results

Total Harvest by Year



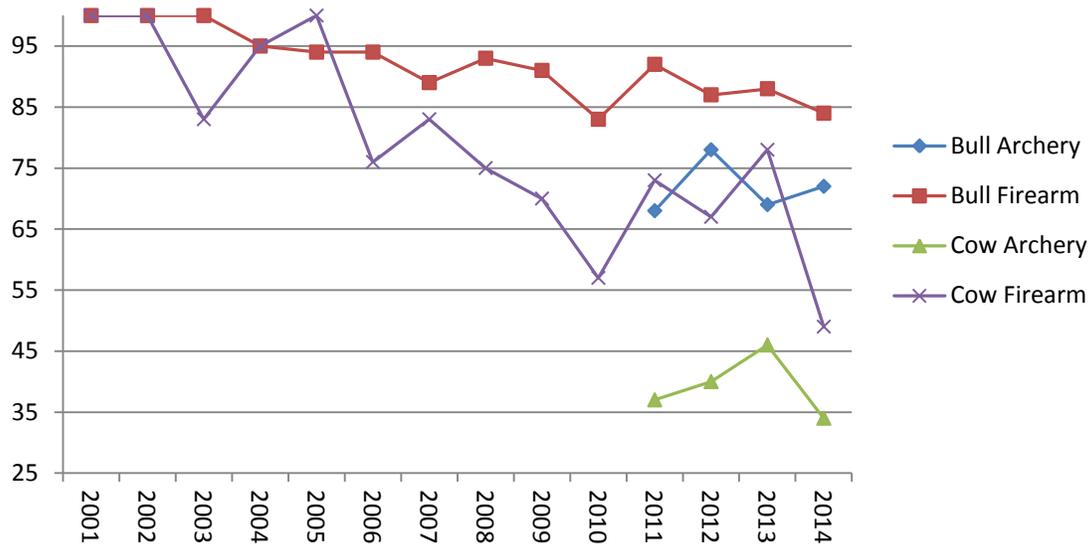
Weapon Type Harvest Summary



Success Rates by Area

	Caney LEA	Hazard LEA	Straight Creek LEA	North At Large	South At Large
Bull Archery	75%	85%	53%	76%	55%
Bull Week 1	67%	63%	65%	87%	87%
Bull Week 2	67%	82%	47%	92%	76%
Cow Archery	20%	32%	20%	35%	18%
Cow Week 1	20%	59%	40%	51%	43%
Cow Week 2	10%	34%	21%	60%	31%

Overall Success Rates by Weapon Type



Boone and Crockett Entries

SCORE	Hunter	County	Method	Year
*372 6/8	Terrell Royalty	Knott	Modern Gun	2009
371 0/8	Greg Neff	Bell	Modern Gun	2007
*367 7/8	Kelvin Jackson	Harlan	Modern Gun	2008
367 0/8	Bill Auxier	Knott	Modern Gun	2007
*365 5/8	Brent Jones	Knott	Modern Gun	2013
*361 5/8	Ryan Wilson	Martin	Archery	2014
361 4/8	Franklin Scott	Knott	Modern Gun	2006
360 7/8	Joe Broughton	Pike	Archery	2014
*357 0/8	Bruce Brantley	Perry	Crossbow	2011
*356 6/8	Chris Godby	Knott	Modern Gun	2009

* Indicates Non-typical

This list includes the 10 largest bull elk scored and reported to Kentucky Fish and Wildlife. The department is compiling a list of the top 100 elk taken in Kentucky. Please send copies of official (signed) score sheets to: Kentucky Trophy Elk List, KDFWR, 1 Sportsman’s Lane, Frankfort, KY 40601. Emailed submissions to info.center@ky.gov also will be accepted.

Changes to the 2015-2016 Elk Season

Since 2011, applicants have been able to apply for 2 of the 4 possible tags. Starting for the 2015 hunting season, applicants will be able to apply up to 4 times (once for each category).

During the application process for the 2015-2016 season, all hunters will be drawn for an At-Large Tag. If they choose to do so, they can then apply for one of four Limited Entry Areas (LEA) (Hazard LEA, Straight Creek LEA, Middlesboro LEA, or Prestonsburg LEA). If drawn for an LEA, that hunter may only hunt in that LEA.

The Caney LEA was dissolved and the North and South At-Large Areas were combined into one At-Large area. Additionally, two new LEA areas will be available for the 2015-2016 hunting season: Middlesboro LEA and Prestonsburg LEA.

Crossbow hunters will have more opportunity with additional days added to crossbow season. Crossbow season for bulls and cows will run from September 26th to December 25th 2015 while being closed for bull gun season (October 3rd-16th 2016) and cow gun season (December 12th-18th 2015 and January 2nd-8th 2016).

The second week of Cow Firearm season will be moved to the first Saturday in January, 2016. In the past, Cow Firearm Week 2 fell over the Christmas holiday which restricted the number of days hunters had in the field.

Once an elk is harvested, it is now permissible to remove the head of the animal to facilitate its removal from the field prior to the elk being telechecked. It is still necessary to fill out the harvest log immediately after harvest and telecheck the animal before midnight on the day the elk is harvested or recovered.

If the hide or head of the elk is removed in the field, possibly to quarter the animal, it is now necessary to demonstrate proof of sex by retaining the head or keeping the sex organs attached to the carcass.

A recently developed access program by the Kentucky Department of Fish and Wildlife Resources has created additional elk hunting opportunity for drawn elk hunters for the 2015-2016 hunting season. This new program, call the Voucher Cooperator Elk Permit Program, links people who own or lease elk hunting land with hunters who have drawn an elk tag. Hunter access is accomplished by offering landowners/lessees an elk tag when they accumulate 20 points (harvest bull = 2 points, harvested cow = 1 point). Hunters will sign up to hunt voucher properties on a first come, first served basis though an online system after the area draw is complete.

Disease Surveillance

Brainworm (*Parelaphostrongylus tenuis*)

Brainworm, or meningeal worm, is the common name for a parasite that affects elk and other deer species. White-tailed deer are carriers of the parasite, but have evolved resistance to the disease. The parasites are limited only to deer species; therefore there is no disease risk to most livestock. Brainworms are small parasitic worms that travel through the body and end up in the spinal cord or brain, where they cause damage to nervous tissue. Elk infected with the parasite may become emaciated, disoriented, and show abnormal behavior such as a loss of fear for humans. Most affected individuals ultimately die from complications caused by the disease. Approximately 4-6% of elk in Kentucky contract the parasite. Brainworm symptoms are similar to those caused by Chronic Wasting Disease (CWD), but the two are in no way related. KDFWR biologists actively seek out animals showing brainworm symptoms and collect biological samples for testing. If you see an elk that fits the description, please contact your local biologist.

Chronic Wasting Disease

Chronic Wasting Disease (CWD) is a disease of high concern to deer and elk across North America. It is caused by a certain type of protein (prion) and causes damage to brain tissue. KDFWR has tested thousands of deer and elk statewide and have not detected the disease.

Current Research

Cause-Specific Mortality, Behavior, and Group Dynamics of Cow Elk in Kentucky

Brittany L. Slabach, John T. Hast, John J. Cox, P.H. Crowley. University of Kentucky Depts. of Forestry and Biology; Dr. Tina Brunjes, R. Daniel Crank, Will Bowling, and Gabriel Jenkins, Kentucky Department of Fish and Wildlife Resources

Summary. With an established herd that is actively hunted, information on cause-specific mortality, habitat use, and herd demographics (e.g., age and sex classes that compose the herd) are important to understand population persistence. Cow elk are ecologically important for the growth and persistence of the elk population in Kentucky. Cow elk differ in their behavior and activity patterns from bull elk; lifespan and the influence of group dynamics - associations and relationships between individuals - on herd stability is not completely understood. Group membership and interactions between individuals can have important implications for population spread and habitat use, response to disturbances (e.g., hunter-harvest and roadways), and for disease transmission within a population. Harvest of individuals is presumed to be the greatest cause of mortality of cow elk in Kentucky, yet cause-specific mortality has not been documented. We aimed to address, 1) cause-specific mortality, 2) lifespan, 3) group membership, demographics, and movement between groups, and 4) the development of a model to investigate how disease may spread through the population if a crisis situation were to occur. Understanding these parameters will aid in improved management decisions concerning hunter placement, herd movement patterns, and overall population health.

Methods. We have outfitted a total of 94 cow elk with very high frequency collars (VHF) collars and ear tags for individual identification (2013, N = 40; 2014, N = 54) in order to monitor for cause-specific mortality and behavioral patterns. No additional animals were captured for the 2015 season. All collars have been deployed within the Hazard Limited Entry Area (Fig. 1). Physiological data (e.g., age, body condition, body size) is collected upon capture and behavioral interactions and herd membership are assessed during three key biological seasons; (a) winter herds, (b) nursery herds, and (c) rut harems. Behavioral data for the rut is collected prior to the peak of the rut to not conflict with the opening of the bull archery season.

Results to Date

Cow Age. We analyzed age data via tooth rings in the lower incisor. The age of all marked individuals (cow, calf, and spikes) ranged from 1–20 years. Four obvious age classes emerged, (a) calves, (b) yearlings, (c) 2–7 years old, and (d) 11–20 years old. Four original release cows are in the sample population with two aged 15, and the others aged 17, and 20 respectively. In order to gain a better understanding of the age distribution of the population, we will continue to collect incisors from hunter-harvested cows.

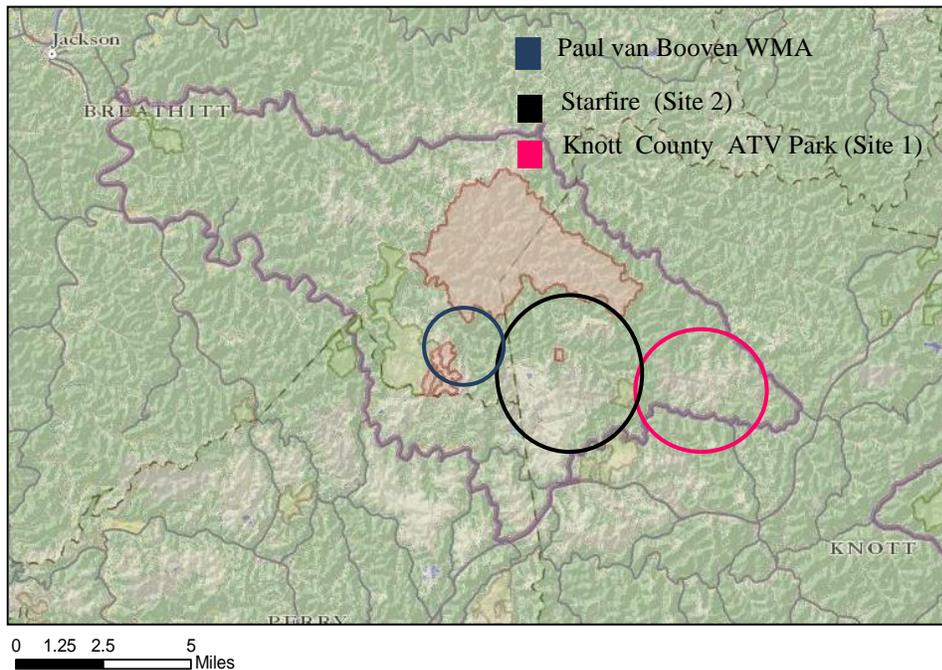


Fig. 1: General home ranges of resident cow herds within the Hazard LEA. Home ranges shift by season, with herds utilizing more canopy cover and forested areas during beginning in late fall (October) through December.

Mortality. A total of 55 marked individuals and 69 marked individuals were on the landscape at the start of the 2013 and 2014 hunting season. A mortality rate of 42% occurred in 2013 (N = 19) and 32% occurred in 2014 (N = 20). The primary cause of mortality is hunter harvest primarily during modern gun season, with the highest percentage of individuals being taken between 2–7 years of age. Three individuals have succumbed to wounding loss (N = 1 in 2013; N = 2 in 2014), with all occurring during the modern gun season as well.

Group Dynamics. Cow elk have high site fidelity, with minimal mixing between herds occupying adjacent habitats (Fig. 1 and 2). The density (connectedness) of groups differs between sites (Site 1 = Knott County ATV Park; Site 2 = Starfire mine in Breathitt and Perry counties), presumably due to the difference in human activity (site 1 = 0.97; site 2 = 0.19; Fig 2.). The herd at Site 1 experiences the highest frequency of human activity in the form of recreational vehicles and foot traffic. A linear dominance hierarchy persists across seasons; preliminary analyses suggest a relationship between association patterns and probability of mortality, specifically dominance status is negatively correlated with age ($\beta = -0.29$, $p < 0.04$) and probability of mortality ($\beta = -0.28$, $p < 0.03$). This suggests that age effects position in the dominance hierarchy and dominance status effects probability of mortality due to human harvest. The effect of selective take of key individuals (Fig. 2 – blue circles) on herd association patterns and persistence over time is currently being analyzed. Field data collection is project to be completed in January of 2016 after the conclusion of the 2015-2016 hunting season. An additional season of behavioral data collection may be necessary.

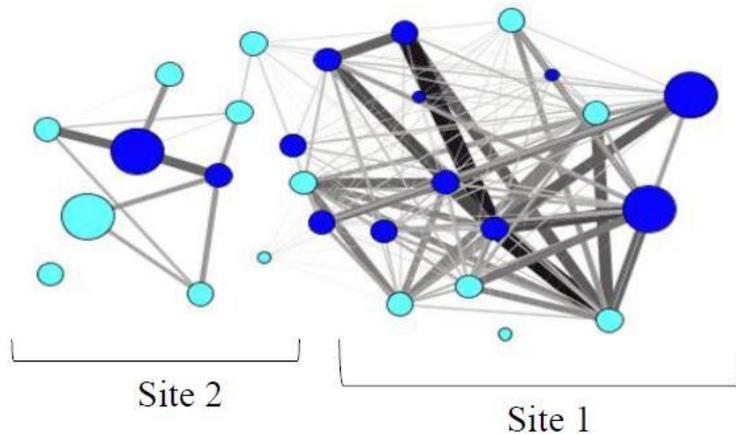


Fig. 2: Whole network associations for two sites during 2013. Site 1 represents the ATV park in Knott County; Site 2 represents Starfire mine in Breathitt and Perry counties. Each circle represents one individual; size represents age class, older individuals (10+) being the largest, calves the smallest. Lines depict an association between individuals; line thickness represents a stronger association. Dark blue denotes individuals that were harvested during the 2013 hunting season.

Contacts

If you have questions about the elk herd or elk hunting opportunities, please visit the elk webpage at fw.ky.gov/Hunt/Pages/Elk-Hunting.aspx or call the KDFWR Info Center at 1-800-858-1549.

Approximately 95% of Kentucky is privately owned. To successfully manage our wildlife resources, the KDFWR works cooperatively with Kentucky’s private landowners. One of the essential ingredients in conserving Kentucky’s wildlife resources is habitat improvement. Wildlife biologists are available to work with interested individuals or groups on properties that they own or have management rights on. To contact your local wildlife biologist for assistance with wildlife management on your property see the map below.

